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Please add new claims 25-63 as follows:

25. A method of detecting signals from a mobile terminal in a wireless communication network comprising a plurality of elements including at least one first base station serving the mobile terminal and at least one second base station, wherein the method comprises:

receiving the signals from the mobile terminal at the first base station;
receiving the signals from the mobile terminal at the second base station;
detecting information data in the signals from the mobile terminal at the first base station;
processing the detected information data; and
signal processing the received signals from the mobile terminal at the second base station by using the processed detected information data to enable improved detection of the signals from the mobile terminal.

26. The method of Claim 25, wherein:

receiving the signals from the mobile terminal at the first base station of sufficient quality to enable detection of the information data in the received signals at the first base station; and

receiving the signals from the mobile terminal at the second base station not of sufficient quality to enable detection of the information data in the received signal at the second base station.

27. The method of Claim 25, further comprising:

transferring the detected information data from the first base station to the second base station;

processing the detected information data at the second base station; and

signal processing the received signals from the mobile terminal at the second base station by using the processed detected information data to enable improved detection of the signals from the mobile terminal using the processed detected information data at the

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second base station to signal process the received signals from the mobile terminal at the second base station to enable improved detection of the signals from the mobile terminal.

28. The method of Claim 25, wherein the information data transmitted by the mobile terminal is unknown information data.

29. The method of Claim 25, wherein the information data transmitted by the mobile terminal comprises a predefined sequence.

30. The method of Claim 25, wherein the using the processed detected information data comprises:

detecting a received time delay caused by signal propagation due to the distance between the mobile terminal and the second base station; and
calculating the received time delay.

31. The method of Claim 25, wherein the signal processing the received signals from the mobile terminal comprises detecting a received power of the received signal from the mobile terminal at the second base station.

32. The method of Claim 31, wherein the detected received power is used for handoff preparation from the first base station.

33. The method of Claim 25, wherein the wireless communications network is a cellular communications direct sequence spread spectrum code division multiple access (DS-CDMA) system

34. The method of Claim 25, wherein the signal processing the received signals from the mobile terminal includes a correlation operation using the processed detected information data to enable integration over a period substantially longer than one information data symbol period.

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35. The method of Claim 25, wherein the detected information data is used to identify the mobile terminal.

36. The method of Claim 25, wherein the processing of the detected information data is performed at any one of the plurality of elements of the wireless communication network.

37. The method of Claim 36, wherein any one of the plurality of elements of the wireless communication network is selected from the group consisting of a base station, a base station controller, and a mobile switching center.

38. The method of Claim 25, wherein the processing of the detected information data is performed partially at a plurality of the elements of the wireless communication network.

39. The method of Claim 38, wherein any one of the plurality of elements of the wireless communication network is selected from the group consisting of a base station, a base station controller, and a mobile switching center.

40. The method of Claim 25, wherein the signal processing the received signals from the mobile terminal is performed at any one of the plurality of elements of the wireless communication network mobile network.

41. The method of Claim 40, wherein any one of the plurality of elements of the wireless communication network is selected from the group consisting of a base station, a base station controller, and a mobile switching center.

42. The method of Claim 25, wherein the signal processing the received signals from the mobile terminal is performed partially at a plurality of the elements of the wireless communication network mobile network.

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43. The method of Claim 42, wherein any one of the plurality of elements of the wireless communication network is selected from the group consisting of a base station, a base station controller, and a mobile switching center.

44. A system for detecting signals from a mobile terminal in a wireless communication network, the system comprising:

at least one first base station serving the mobile terminal;

at least one second base station;

a first receiver at the first base station configured to receive signals from the mobile terminal and to detect information data from the mobile terminal;

a second receiver at the second base station configured to receive signals from the mobile terminal and to detect information data from the mobile terminal;

a processor configured to process the information data detected at the first receiver at the first base station; and

a signal processor configured to signal process the received signals from the mobile terminal by the second base station by using the processed detected information data, to enable improved detection of the signals from the mobile terminal.

45. The system of Claim 44, wherein:

the signals from the mobile terminal received at the first receiver are of sufficient quality to enable detection of the information data in the received signals at the first base station; and

the signals from the mobile terminal at the second receiver are not of sufficient quality to enable detection of the information data in the received signal at the second base station.

46. The system of Claim 44, further comprising a communications link connecting the first base station and the second base station and configured to transfer the detected information data from the first base station to the second base station

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47. The system of Claim 44, wherein the information data transmitted by the mobile terminal is unknown information data.

48. The system of Claim 44, wherein the information data transmitted by the mobile terminal comprises a predefined sequence.

49. The system of Claim 44, wherein the signal processor is configured to:
detect the received time delay caused by signal propagation due to distance between the mobile terminal and the second base station; and
calculate the received time delay.

50. The system of Claim 44, wherein the signal processor is configured to detect the received power of the signal from the mobile terminal signal at the second base station.

51. The system of Claim 50, wherein the detected received power is used for handoff preparation from the first base station.

52. The system of Claim 44, wherein the wireless communications network is a cellular communications direct sequence spread spectrum code division multiple access (DS-CDMA) system.

53. The system of Claim 44, further comprising a correlator receiver configured to use the processed detected information data to integrate the received signals from the mobile terminal over a period substantially longer than one information data symbol period.

54. The system of Claim 44, wherein the detected information data is used to identify the mobile terminal.

55. A method of detecting signals from a mobile terminal in a wireless communication network comprising at least one first base station serving the mobile terminal and at least one second base station, wherein the method comprises:

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receiving the signals from the mobile terminal at the first base station;
receiving the signals from the mobile terminal at the second base station;
detecting information data in the signals from the mobile terminal at the first base station;
selecting a portion of the detected information data;
transferring the selected portion of the detected information data from the first base station to the second base station;
scrambling the transferred selected portion of the detected information data to be substantially similar in envelope and phase to the signals transmitted by the mobile terminal corresponding to the selected portion of the detected information data;
signal processing the received signals from the mobile terminal at the second base station by using the scrambled selected portion of the detected information data to enable improved detection of the signals from the mobile terminal;
detecting a received time delay caused by signal propagation due to the distance between the mobile terminal and the second base station; and
detecting a received power of the received signal from the mobile terminal at the second base station.

56. The method of Claim 55, wherein the detected received power is used for handoff preparation from the first base station.

57. The method of Claim 55, wherein the wireless communications network is a cellular communications direct sequence spread spectrum code division multiple access (DS-CDMA) system.

58. The method of Claim 55, wherein the signal processing the received signals from the mobile terminal at the second base station includes a correlation operation using the processed detected information data to enable integration over a period substantially longer than one information data symbol period.

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59. The method of Claim 55, wherein the detected information data is used to identify the mobile terminal.

60. The method of Claim 25, wherein the signal processing the received signals from the mobile terminal at the second base station comprises singularly or in any combination a signal processing technique selected from the group consisting of:

- serial correlation signal processing;
- matched filter correlation signal processing;
- maximum likelihood sequence estimation signal processing;
- joint-detection signal processing; and
- multi-user detection signal processing.

61. The method of Claim 25, additionally comprising signal processing the received signals from the mobile terminal at the first base station by using the processed detected information data to enable improved detection of the signals from the mobile terminal.

62. The method of Claim 25, wherein the receiving the signals from the mobile terminal at the first base station occurs through a communication channel, wherein the communication channel comprises singularly or in any combination a communication channel selected from a group consisting of:

- a traffic channel;
- a random access channel; and
- a control channel.

63. The method of Claim 62, wherein the communication channel operates singularly or in any combination in a mode selected from a group consisting of:

- a circuit switched mode; and
- a packet switched mode.